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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/755,412 | 01/05/2001 | Sylvia Allegro | 33234 | 5228 |

116 7590 02/23/2004

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| EXAMINER |
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CHAWAN, VIJAY B

| ART UNIT | PAPER NUMBER |
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2654

DATE MAILED: 02/23/2004

19

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/755,412

Applicant(s)

ALLEGRO ET AL.

Examiner

Vijay B. Chawan

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>18/ 1-2-04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rahim (EP 0 881 625 A2) in view of Nagata (6,009,396).

As per claims 1 and 3, Rahim teaches a method for recognizing vocal features in an acoustic signal comprising the steps of:

extracting, during an extraction phase, characteristic features from an acoustic signal captured by at least one microphone, wherein at least auditory – based characteristics are identified (Figure 1, items 10, 14);

processing, during an identification phase and with the aid of Hidden Markov Models, said characteristic features for the determination of a momentary acoustic scene or of sounds and/or for voice and word recognition, and, selecting and

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executing a suitable process from a plurality of available processes based on the identified acoustic scene (Col.3, line 20 – Col.4, line 50, Col.6, lines 26-45).

Rahim while teaching a method for identifying a momentary acoustic scene, does not specifically teach mapping the extracted characteristics to specific individual sound sources. Nagata, however, does teach a method and system for microphone array input speech or auditory recognition scheme capable of realizing a high precision sound source position or estimation by a small number of calculations (Col.2, lines 18-64). Therefore, it would have been obvious to one with ordinary skill in the art at the time of invention, that by mapping the extracted characteristics to specific sound source as taught by Nagata, into the method of Rahim, because an artisan would realize that this would result in a high precision speech recognition of a particular auditory scene or an individual speaker.

As per claim 2, Rahim teaches the method of claim 1, wherein for the identification of the characteristic features during the extraction phase, Audity Scene Analysis (ASA) techniques are employed (Col.6, lines 26-52).

As per claim 4, Rahim teaches the method of claim 1, wherein at least one of the following auditory characteristics are identified during the extraction of said characteristic features: loudness, spectral pattern, harmonic structure, common on and offsets, coherent amplitude modulations, coherent frequency modulations, coherent frequency transitions and binaural effects (Col.6, lines 26-52).

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As per claim 5, Rahim teaches the method of claim 1, wherein at least one non-auditory characteristic is identified in addition to the auditory features (Col.6, lines 26-52, Col.12, lines 16-31).

As per claim 6, Rahim teaches the method of claim 1, wherein to create auditory objects, and any other features are grouped along the principles of Gestalt theory (Col.7, lines 39-55).

As per claim 7, Rahim teaches the method of claim 5, wherein the extraction of characteristics and/or grouping of the characteristics are/is performed either in context-free or in context-sensitive fashion, and further including the step of taking into account in the sense of human auditory perception, based upon information relative to the signal content and providing an adaptation to the respective acoustic scene (Col.7, lines 8-21).

As per claim 8, Rahim teaches the method of claim 1, wherein during the identification phase, data is accessed which was acquired in an off-line training phase (Col.3, line 27 – Col.4, line 1, Col.12, line 48 – Col.14, line 50).

Claims 19-31 are similar in scope and content of claims 1-8, and are rejected under similar rationale.

Response to Arguments

3. Applicant's arguments with respect to claims 1-31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vijay B. Chawan whose telephone number is (703) 305-3836. The examiner can normally be reached on Monday Through Thursday 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vijay B. Chawan 2/21/04
Vijay B. Chawan
Primary Examiner
Art Unit 2654

Vbc
2/21/04

**VIJAY CHAWAN
PRIMARY EXAMINER**